

**NALCO CHEMICAL COMPANY**

180 N. MICHIGAN AVENUE • CHICAGO, ILLINOIS 60601 • AREA 312-782-2035

February 4, 1971

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Mr. A. Suhre
Cerro Copper and Brass Co
East St. Louis, Illinois

Subject: Chemical Cleaning of Air Compressor Cooling
Water Systems

Dear Al:

In accordance with your request for information regarding the subject I offer the following for your consideration.

A sample of the deposit was analyzed to determine which Nalclean product performed best. Nalclean 468, a formulation of dry, organic acids, did the best job. (See attached product bulletin). A survey of the systems in both the Mill and Foundry areas provided volumes of "catch basins" and the total number of compressors and after-coolers to be cleaned.

The amount of Nalclean 468 required is dependent upon:

1. The amount of deposit in each system and
2. The holding capacity of each system.

The former is, of course, difficult to ascertain. The volumes were approximated from survey information and are as follows:

<u>SYSTEM</u>	<u>NO. OF COMPRESSORS/ Aftercoolers</u>	<u>Approx. Volume (gal)</u>
Main Compressor House	6/3	390
Auxiliary Compressors 7 & 8	2/1	180*
Joy Compressor	1/1	180*
Bldg. 19	1/1	110
Bldg. 80	3/2	390*
	TOTAL	1250

*NOTE: "catch basins" drained down to one (1) foot depth to reduce volume.

With the extent of information limited essentially to volume, the following procedure is recommended:

1. Drain system down (if noted) and bypass the cooling tower.

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2. Add 20 pounds of Nalclean 468 into the "catch basin" and stir into solution.
3. Recirculate solution and operate air-compressors intermittently or as needed to reach and maintain highest possible safe temperature.
4. Drain and flush system.
5. Fill system to original capacity and add one (1) pound of caustic soda per 120 gallons and recirculate for two (2) hours.

NOTE: Solution strength is vital to reasonable reaction rates (minimum of 2% is recommended). Therefore, after several minutes of recirculation, a test of solution strength will be made and if necessary additional Nalclean added. At this strength, the solution will be blue-green in color. As reactions take place and strength is diminished, the color will change from blue-green to purple. Additional Nalclean is then added to restore original strength. A continuous blue-green color should be maintained for a minimum of two (2) hours in order to insure good deposit removal.

The required amount of Nalclean 468 is, of course, almost impossible to determine. As an estimate we recommend 40 pounds per 100 gallons estimated holding capacity. Nalclean 468 is available in 100 lb. fibre drums and is priced at \$0.830 per pound, f.o.b. Clearing, Illinois.

I will plan to work with you during the cleaning procedure. If there are any questions please call me.

Yours very truly,

Don L. Manlove
District Representative

DLM/gg

Enc.

cc: Mr. D. Tandler
Mr. C. Hummel
Mr. W. Wiseman
Mr. T. Cornwell
Mr. R. L. Bieberdorf
Mr. R. Bloemke

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